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| 10/500,209 | 06/28/2004 | Takayuki Suzuki | 500.43947X00 | 2529 |
| 7590 | 11/25/2008 | | | |
| Antonelli Terry Stout & Kraus Suite 1800 1300 North Seventeenth Street Arlington, VA 22209 | | EXAMINER RADEMAKER, CLAIRE L. | | |
| | | ART UNIT 1795 | | PAPER NUMBER |
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | |
|------------------------------|--|--------------------------------------|
| Office Action Summary | Application No. 10/500,209 | Applicant(s) SUZUKI ET AL. |
| | Examiner CLAIRE L. RADEMAKER | Art Unit 1795 |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If no period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED. (35 U.S.C. § 133).

Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 6/28/04, 10/27/04, 6/4/08, 7/28/08.

2a) This action is FINAL. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-6,8,10-12,14 and 16-21 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) Claim(s) _____ is/are allowed.

6) Claim(s) 1-6,8,10-12,14 and 16-21 is/are rejected.

7) Claim(s) _____ is/are objected to.

8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on 28 June 2004 is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some * c) None of:

1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) Notice of References Cited (PTO-892)

2) Notice of Draftsman's Patent Drawing Review (PTO-948)

3) Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 6/28/04, 10/27/04, 6/4/08

4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____

5) Notice of Informal Patent Application

6) Other: _____

DETAILED ACTION

Response to Amendment

1. This office action is in response to the amendment filed on July 28, 2008. Claims 1-6, 8, 10-12, 14, & 16-21 are pending and are rejected for reasons of record.

Information Disclosure Statement

2. The information disclosure statement filed June 6, 2008 fails to comply with 37 CFR 1.98(a)(3) because it does not include a concise explanation of the relevance, as it is presently understood by the individual designated in 37 CFR 1.56(c) most knowledgeable about the content of the information, of each document listed that is not in the English language. Therefore, the Japanese Official Action dated March 4, 2008 for Application No. 2003-557057 has been lined out and has not been considered.
3. Furthermore, due to the Applicant's arguments (Applicant's Response, page 9), cited reference JP 2000-048740 in the June 28, 2004 IDS has been lined out. Additionally, reference citation of JP 2000-348740 in the October 27, 2004 IDS has been considered.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-6, 14, & 16-21 are rejected under 35 U.S.C. 102(b) as being anticipated by Pellegr et al. (US 4,197,178).

With regard to claims 1-6, 14, & 16-21, Pellegr et al. discloses a fuel cell (col. 1, lines 9-11 & col. 2, lines 50-51; Figure 1) comprising a separator (3, col. 5, line 18; Figure 1), wherein the separator is a molded body (col. 2, lines 60-68 & col. 3, lines 7-8) comprising graphite and a thermosetting resin in a graphite:resin ratio of 50wt%:50wt% to 90wt%:10wt% (col. 2, lines 50-54 & 65-68); wherein the separator has a rib portion (14, col. 5, lines 39-44; Figure 1) a flat portion (Figure 1), and openings within the flat portion (15 / 16 / 18 / 19, col. 5, lines 39-44 & col. 6, lines 39-40 & 45; Figures 1 & 3), but fails to specifically state the bending strain at break, compressive modulus, & shore hardness.

While Pellegr et al. fails to specifically state the specified properties (bending strain at break, compressive modulus, and Shore hardness) of the separator, one of ordinary skill in the art would understand that these properties are inherent to the composition and method of making the separator. Therefore, because the separator of Pellegr et al. is materially the same as the separator of the instant application, and was made by the same process as that of the instant application (compression molding), one of ordinary skill in the art would understand that the separator of Pellegr et al. would

inherently have the same properties, such as the specified bending strain at break, compressive modulus, and shore hardness, as the separator of the instant application.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 8, 10-12, & 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pellegrini et al. (US 4,197,178) in view of Tashiro et al. (JP 2000-100453).

With regard to claims 8, 10-12, & 14, Pellegrini et al. teaches a fuel cell (col. 1, lines 9-11 & col. 2, lines 50-51; Figure 1) comprising a separator (3, col. 5, line 18; Figure 1), wherein the separator is a molded body (col. 2, lines 60-68 & col. 3, lines 7-8) comprising graphite and a thermosetting resin in a graphite:resin ratio of 50wt%:50wt% to 90wt%:10wt% (col. 2, lines 50-54 & 65-68); wherein the separator has a rib portion (14, col. 5, lines 39-44; Figure 1) a flat portion (Figure 1), and openings within the flat portion (15 / 16 / 18 / 19, col. 5, lines 39-44 & col. 6, lines 39-40 & 45; Figures 1 & 3), but fails to teach the use of pulverized expanded graphite powder or specifically state the bending strain at break, compressive modulus, & shore hardness.

Tashiro et al. teaches a fuel cell (paragraphs [0001], [0006] & [0032], claim 5; Figure 2) comprising a separator (1, paragraphs [0006] & [0032]), wherein the separator

comprises expanded graphite, which is a pulverized powder made from an expanded graphite sheet, (paragraphs [0007] & [0002]) and a thermosetting resin (paragraphs [0006] & [0018]), where said expanded graphite can be washed to remove impurities such as sulfate ions (paragraphs [0011]-[0012]) in order to create a separator with improved machine hardness and electrical properties (paragraph [0017]).

It would have been obvious to one of ordinary skill in the art at the time of the invention to replace the graphite of Pellegrini et al. with the expanded graphite of Tashiro et al. in order to create a separator with improved machine hardness and electrical properties (paragraph [0017]).

While Pellegrini et al. fails to state the specified properties (bending strain at break, compressive modulus, and Shore hardness) of the separator, one of ordinary skill in the art would understand that these properties are inherent to the composition and method of making the separator. Therefore, because the separator of Pellegrini et al. is materially the same as the separator of the instant application, and was made by the same process as that of the instant application (compression molding), one of ordinary skill in the art would understand that the separator of Pellegrini et al. would inherently have the same properties, such as the specified bending strain at break, compressive modulus, and shore hardness, as the separator of the instant application.

Furthermore, while modified Pellegrini et al. fails to specifically state that the separator will behave the same as the separator of the instant application when soaked in water for the disclosed amount of time at the disclosed temperature, one of ordinary skill in the art would understand that the separator of modified Pellegrini et al. would

behave the same as the separator of the instant application, due to the specified composition and method of making the separator.

Furthermore, it is noted that the product-by-limitations of claim 8 is not given patentable weight since the courts have held that patentability is based on a product itself, even if the prior art product is made by a different process (MPEP 2113). Moreover, a product-by-process limitation is held to be obvious if the product is similar to a prior art product (MPEP 2113). Claim 8 as written does not distinguish the product of the instant application from the product of the prior art.

Response to Arguments

Information Disclosure Statement

8. Applicant's arguments with regard to the objections to the June 28, 2004 Information Disclosure Statement (IDS), filed on July 28, 2008, have been fully considered and the Examiner's objections are withdrawn due to the Applicant's amendments and arguments.

Applicant's arguments with regard to the objections to the October 27, 2008 Information Disclosure Statement (IDS), filed on July 28, 2008, have been fully considered and the Examiner's objection to the citation of JP 2000-348740 is withdrawn due to the Applicant's amendments and arguments. Cited reference JP 2000-348740 in the October 27, 2004 IDS has been considered.

However the objection to the citations of JP 2001-189159, EP 1094534, JP 8-222241, and JP 2002-184420 in the October 27, 2008 IDS is maintained. These references were cited in the June 28, 2004 IDS.

Additionally, due to the Applicant's arguments, cited reference JP 2000-048740 in the June 28, 2004 IDS has been lined out.

Double Patenting

9. Applicant's arguments with regard to the Nonstatutory Obviousness-Type Double Patenting rejection of claims 8, 10-12, & 15, filed on July 28, 2008, have been fully considered and the Examiner's rejections are withdrawn due to the Applicant's amendments and arguments.

Specification

10. Applicant's arguments with regard to the objection to the Specification regarding the weight ratio of graphite:resin and a typographical error, filed on July 28, 2008, have been fully considered and the Examiner's objections are withdrawn due to the Applicant's amendments and arguments.

Claim Objections

11. Applicant's arguments with regard to the objections to claims 3, 7, & 9-15 regarding multiple dependency, filed on July 28, 2008, have been fully considered and

the Examiner's objections are withdrawn due to the Applicant's amendments and arguments.

Claim Rejections - 35 USC § 102

12. Applicant's arguments with respect to claims 1-6, 8, 10-12, 14, & 16-21, filed on July 28, 2008, have been considered but are moot in the view of the new grounds of rejection. The new grounds of rejection are necessitated by the Applicant's amendment and all arguments are directed toward the feature of the separator comprising a flat portion and openings within the flat portion, which was not considered in the prior Office Action due to, being added to the independent claims 1 & 8.

13. Applicant's arguments with respect to claims 1-6, 8, 10-12, 14, & 16-21, filed on July 28, 2008, have been considered but are not persuasive.

On page s 12 & 14-15 of the Applicant's Response, Applicants argue that "it is emphasized that the recited total concentration of sodium, potassium, iron, nickel, and magnesium released into the soaking water, and concentration of sulfur released into the soaking water are those determined after soaking the separator with water under prescribed conditions... [where] these constitute a property of the separator, the property being measured under specific procedures" (Applicant's Response, page 14).

The Examiner respectfully disagrees with the Applicants argument that the limitation of soaking the separator in a specified volume of water for a specified amount of time at a specified temperature of claim 8, which would cause specified amounts of sodium, potassium, iron, nickel, magnesium, and sulfur to release into said water, "constitutes a property of the separator, the property being measured under specific procedure" (Applicant's Response, page 14) because one of ordinary skill in the art would understand that the separator of modified Pellegrini et al. would behave the same as the separator of the instant application when soaked in water for the disclosed amount of time at the disclosed temperature due to the specified composition and method of making said separator.

Furthermore, it is noted that the limitation of soaking said separator in a specified amount of water for a specified amount of time at a specified temperature is a product-by-limitations of claim 8 and is therefore not given patentable weight since the courts have held that patentability is based on a product itself, even if the prior art product is made by a different process (MPEP 2113). Moreover, a product-by-process limitation is held to be obvious if the product is similar to a prior art product (MPEP 2113). Claim 8 as written does not distinguish the product of the instant application from the product of the prior art.

On page 15 of the Applicant's Response, Applicants argue that "the contention by the Examiner that the separator ... would have the same properties, such as the specified bending strain at break, compressive modulus, and Shore hardness, as it is

materially the same as the separator of the above-identified application[s] and was made by the same process, is respectfully traversed" (Applicant's Response, page 15).

The Examiner respectfully disagrees with the Applicants argument that the properties such as bending strain, compressive modulus, and Shore hardness are not inherent to a separators composition and the method of making said separator (Applicant's Response, page 15) because one of ordinary skill in the art would understand that properties such as bending strain, compressive modulus, and Shore hardness are dependent upon an objects composition and the method of making said object. Applicants have not provided evidence to support their argument.

Conclusion

14. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to CLAIRE L. RADEMAKER whose telephone number is (571)272-9809. The examiner can normally be reached on Monday - Friday, 8:00AM - 4:30PM, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Alexa Neckel can be reached on 571-272-1446. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Mark Ruthkosky/
Primary Examiner, Art Unit 1795

/C. L. R./
Examiner, Art Unit 1795